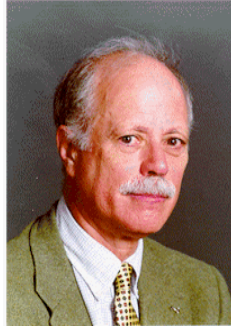


## Forest Industry Lecture Series



**Forest Industry Lecture No. 39**  
**The Fight Over Forests and How to Resolve It**

Dr. Alston Chase  
Paradise Valley, Montana

Forest Industry Lecturer  
Forest Industry Lecture Series  
Department of Renewable Resources  
Faculty of Agriculture, Forestry, and Home Economics  
University of Alberta  
Edmonton, Alberta  
Canada T6G 2H1

Thursday 16 October 1997

---

### **THE FOREST INDUSTRY LECTURE SERIES**

The forest industry in western Canada cooperates with the Canadian Forest Service and the Alberta Environmental Protection Agency to provide funds to sponsor noteworthy speakers. This initiative significantly enriches the Renewable Resources Program in the Faculty of Agriculture, Forestry, and Home Economics at the University of Alberta.

The Forest Industry Lecture Series was started during the 1976-77 University term as a seminar course. The late Desmond I. Crossley and Maxwell T. MacLaggan presented

the first series of lecturers. The contributions of these two noted Canadian foresters is greatly appreciated.

Subsequent speakers in the series have visited for periods of up to a week, with all visits highlighted by a major public address. Visitors have come from throughout North America, Europe, Africa and Asia. Their talks have dealt with a wide range of topics, such as: forest ecology, forest science, silviculture, wildlife management, forest management, ecosystem management, lumber and paper sales, labor, international trade, forest economics and forestry-related social issues. Speakers have been scientists, industry and business leaders, senior government officials, academics and forestry alumni. A complete list of the speakers and their topics is presented at the end of this pamphlet. Copies of most presentations are available from our Department Office upon request.

The following is an accurate and complete transcription of the 39<sup>th</sup> Forest Industry Lecture delivered by Dr. Alston Chase on 16 October 1997 at the University of Alberta. Included are the questions and answers that followed his presentation, which was titled:

*"The fight over forests and how to resolve it".*

You will find the text to be over 20 pages in length because this talk is unedited. However, if a more refined or better reflection of Dr. Chase's skills are desired, we refer you his two most widely acclaimed books: "**Playing God in Yellowstone**" or "**In a Dark Wood**". Alston is truly one of the more informed environmentalist in the world and we present this lecture to you with pleasure.

The Forest Industry Lecture Series Committee  
Department of Renewable Resources  
The University of Alberta  
Edmonton, Alberta

## **SPONSORS**

We take this opportunity to thank again the sponsors of the 1997 program. We greatly appreciate their willing and sustained support, through which we have been able to provide the latest concepts and practices of forest management from around the world

to the foresters and forestry students within Alberta. Also because of this Series, we have been able to showcase the excellent forest management practices in Alberta to foresters elsewhere. We are of course dedicated to the goal of understanding and teaching people about forestry in Alberta and elsewhere. This program allows us to do just that, and for that we are grateful.

We identify with pleasure the following companies and organizations, who sponsored this lecture. They are:

Ainsworth Lumber Co. Ltd.-Grande Prairie  
Alberta Alumni Foresters' Association-Edmonton  
Alberta Environmental Protection-Edmonton  
Alberta Forest Products Association-Edmonton  
Alberta Newsprint Co.-Whitecourt  
Alberta Pacific Forest Industries Ltd.-Edmonton  
Alberta Registered Professional Foresters' Association-Edmonton  
Beck Consulting-Edmonton  
Blue Ridge Lumber (1981) Ltd.-Whitecourt  
Canadian Forest Products Ltd.-Grande Prairie  
Canadian Forest Service-Edmonton  
Canadian Institute of Forestry(Rocky Mountain Section)-Edmonton  
Daishowa-Marubeni International Ltd.-Peace River  
Con A. Dermott Environmental & Forestry Services-Sherwood Park  
Ezra Consulting-Athabasca  
The Forestry Corp-Edmonton  
KPMG-Peat Marwick Thorne-Edmonton  
Millar Western Pulp Ltd.-Edmonton  
Pearson Timberline Forestry Consultants-Edmonton  
Silvacom Forestry Consultants-Edmonton  
Simons Reid Collins-Edmonton  
Clifford B. Smith-Sherwood Park  
Sundance Forest Industries Ltd.-Edson  
Sunpine Forest Products Ltd.-Sundre  
Tall Timber Forestry Services Co. Ltd.-Whitecourt  
Weldwood of Canada Limited-Hinton Division  
Weyerhaeuser Canada Ltd.-Alberta Division  
Weyerhaeuser Canada Ltd.-Grande Prairie Division  
Weyerhaeuser Canada Ltd.-Saskatchewan Division

Alston Chase is one of America's leading environmental writers, speakers and scholars. He lectures widely and writes a nationally syndicated newspaper column on the environment. He is a contributing editor to both **Outside** and **Conde Nast's Traveler** magazines, and was recently a visiting Senior Fellow in Natural Resource Policy at Harvard University's Kennedy School of Government, where he lead

seminars on the Endangered Species Act and press coverage of environmental issues.

Dr. Chase is an alumnus of Harvard, Oxford and Princeton universities. He is former Chairman of the Department of Philosophy at Macalester College and former Chairman of the History and Philosophy of Science Section of the Minnesota Academy of Sciences. Also, he is the former Chairman of the Board of the Yellowstone Association, which is dedicated to promoting research and education in Yellowstone. Dr. Chase has served as a consultant to the National Science Foundation, the Northwest Area Foundation, the Rockefeller Foundation, National Endowment for the Humanities and several colleges and universities.

He is the winner of several magazine awards. He has written on the environment for such magazines as: The Atlantic, New York Times, Washington Monthly, The Wall Street Journal, Rolling Stone, Orion Nature Quarterly, Countryside, Outside, Travel and Leisure, American Way, Modern Maturity, Lear's, and Conde Nast's Traveler. In addition, he has contributed scholarly papers to the Proceedings of the American Association for the Advancement of Science, The Educational Record, The Rockefeller Foundation Working Papers, Academic Questions, Sigma-Xi, the Scientific Research Society and the National Science Foundation's division of Policy Research and Analysis. He served as consultant to KTCA public television's 1983 award-winning documentary on the Minnesota timber wolf.

However, Dr. Chase is probably best known for his 1986 book, **Playing God in Yellowstone: The Destruction of America's First National Park**. This book catapulted Dr. Chase into the forefront of environmental politics and earned him a reputation as a leading commentator on issues of natural preservation. Playing God was featured on the cover of Newsweek, and was named by Outside magazine as one of the ten most important works on the environment in the last decade. Dr. Chase's most recent and widely reviewed book is titled: **In a Dark Wood: The fight over forests and the rising tyranny of ecology**.

I am actually going to see if I can turn on this wire so that I don't have to bend over when I talk to you - It is a delight to be here by the way . The last time I was in Alberta I was with Paul Watson. Some of you may know who Paul Watson is - he is the founder and leader of Sea Shepherds - a group of direct action environmental vigilantes who go around the ocean sinking whaling ships . Watson claims to have sunk 13. I was doing a story on him for a national magazine in the USA and so we whistle stopped through Canada while he was raising money and I got to know him quite well . And I might say that I have had the good fortune as a result of my profession to meet and talk with people of all persuasions on environmental issues . And I often find myself liking people to hate each other. For example, when I wrote "In a Dark Wood", I found myself liking Judy Barry who figures prominently in my book, she is an environmental activist with "Earth First" who died tragically last spring of breast cancer at a young age . And her nemesis was the President of Pacific Lumber Co., who I also considered a friend and respect. Yet of course, those two people are the diametrically opposite sides of the poles on these issues and I came to the

conclusion that one of the problems with environmental issues is that they tend to be portrayed as good versus bad. Both sides do this. But I couldn't really see the bad or the good, rather what I saw was true and false ideas.

The issues that we are dealing with are driven by ideas - that is why I put up this quote "*Note this you proud men of action - you are nothing more than the unconscious hawd carriers of the men of ideas*". That was what Enrich Heiner - a 19th century German poet wrote, and I think that is a good theme of what I am going to be talking to you today. On the side, the late actor, Michael Landon who starred in "Little House on the Prairie" and some other television series once told a story to Johnny Carson of moving into a new neighborhood with his family. And the Landons had their own dog - a golden retriever - and the neighbor's next door had a little rabbit . And they could see this rabbit jumping around the yard. And the Landon's worried a little bit about their dog getting to the rabbit and they wanted the dog not to do that.. And the dog seemed to be behaving himself. Until, one day their dog came to the back door of their house - the rabbit was in the dog's mouth - dead. Well, the Landon's had just moved into the neighborhood and they were particularly horrified - horrified anyway - but the thought that this was the way they were going to be introduced to their neighbors that their dog had just killed their rabbit. They didn't dare confront their neighbor with this confession , so in the middle of the next night Landon took the body of the little rabbit and took it over to the neighbor's yard, and he put it in the hutch that the rabbit had been staying in . The little dead rabbit was placed in the hutch, and Landon went back to his house. A few days later he finally met his new neighbor and the neighbor said "you know, it was the darndest thing, our rabbit died last week and the next day it appeared in the hutch - he said we buried it and the next day it was back in the hutch . So, this a bit like environmental conflicts. You can't keep them buried, even when you drive stakes through their hearts. They have a way of coming back to haunt you . And certainly the environmental conflicts in the USA - about the fight over forests particularly with potential focus on the specific Northwest, which certainly must go down as the longest environmental conflict in the USA history. And in a sense is still going on.

Last summer I was invited and gave a talk at a conference on conflict resolution in Katron County, New Mexico near the Helli Wilderness . Katron County is supposed to be the birth place of two radical movements. First of all it was where "Earth Firsters" and some of the "monkey wrenches" went on to fame as a guerrilla monkey wrencher and "guerrilla theatre" experts on the environmentalist side of the environmental battles over the last few decades started and learned the earn their stripes, as it were, in Katron County. Katron County is the home of Helli Wilderness, which is the first wilderness in the USA. It was established in 1924 wilderness area. And at the same time - Katron Country - has more recently been known as the birth place of the so-called countess movement - or some people refer to it as a version of the sagebrush rebellion in an attempt by local counties to take over federal land. When I went down to Katron County, I was surprised to see how many Forest Service people were there , but these people were not rangers. Rather, were in two categories of professions. Some of them were conflict resolutions specialists and the other were

psychologists/counselors . It turned out that this area has experienced so much violence with the rangers being shot at - with pipe bombs being found on trails that it was getting to the psyche of the forest rangers. And they had a serious moral problem with the forest rangers, so the Forest Service brought in these people to counsel rangers and their families on how to live in an environment that was extremely hostile to them . So, we had in Katron County - what you might think of as a another battle field in a war that - in Katron County in particular the issue was essentially the shutting down of logging on the public land on the natural forests around the area in response to court orders to protect the Mexican spotted owl. As a consequence of the severe reduction in logging Katron County receipts from the forest service sales, which goes to the Forest Service to the local government in lieu of taxes dropped from \$489,000 to \$32,000 in one year. Nationally we know of course that this has been part - in fact - what is a national revolution in the USA, which seems to be determined to get out of the business of forests altogether . The 30-year average of the forests harvest on public land in the USA was an average of 11 billion board feet a year and it has been down to a 3 billion on the last year that we had figures. So this is a dramatic reduction and much of this has to do - certainly the focus of this was the fight over the owl.

Now there are three owls, - at least the USA Fish & Wildlife Service identifies three owls, genetically they are essentially the same owl, but for purposes of the law they have been defined differently . Specifically, we have the northern spotted owl in Oregon and Washington, the California spotted owl, and then there is the Mexican spotted owl. And this issue over the spotted owl and the way in which the concern over the owl lead to the dramatic reductions in timber sale - in fact it is a real revolution on how Americans view forests began a long, long time ago. It is difficult for me to even say when the controversy over the owl began. We could say that it began in 1968 when a young undergraduate at Oregon State University named Eric Forceman has a summer job as a forest fire lookout in the Yuelemot National Forest. One night while sitting on the back porch of his cabin in the forest he heard this strange sound, and he looked on the fence, and there was a spotted owl. Forceman became very interested in owls and decided to write his Ph.D. dissertation on owls. Maybe that was the start of this fight. Maybe the start of the fight was in 1970, when the Nixon administration signed appropriation bill to support US scientific participation in the International Biological Program. And as part of that program Oregon State University won a federal grant to participate in the program with the so-called "Coniferous Forests by Own Project". And that "Coniferous by Own Project" began in 1970 - and it began by accident - but with old growth - it began there because Jerry Franklin - who has since become well known - as a forest ecologist at the University at that time - as one of the leaders in that project wanted to do the research at Andrews Forest - because he liked Andrews Forest. Andrews forest was the only forest that was accessible to researchers all year round was in the lower elevations along the watershed and that just happens to be where old growth is commonly found. So they decided, mainly for convenience, that they would start working looking at old growth forests and this led to the branch of forestry that we sometimes refers to as the "New Forestry". The work done at Oregon State became one of the propellants of the

issue over forestry and the Northern spotted owl. Another possible starting point was that year in 1976 when Eric Forceman by this time a graduate student writing his master's dissertation on spotted owl and had radio collared a few and one of them was apparently lost, and he was trying to find it When he did locate it he found it very, very far from where he collared it and he concluded that these owls have a very large home range and therefore, that every owl pair requires a very large range of old growth forests. And so that was a revelation to him - although it was eight years before any of his work became written, he was very soon lecturing to local chapters of the Audubon Society and other environmental organizations and so the word got out around Eugene and Corvallis that Eric Forceman was not finding many owls and the owls required old growth to survive. So the environmentalists were looking for a way to stop logging and at this time, there was a "RARE 2" process in operation in the USA where the roll less area of review evaluation No. 2 which was done to conduct an inventory to see what land might be set aside as wilderness - an environmentalists wanted to see a maximum amount of land set aside for wilderness and they thought that the protection of the owl might be a rationale for doing this. The Endangered Species Act in 1973 was fresh on the books and here was an opportunity perhaps to see about listing the owl, but they couldn't list the owl until there was more science. Was the owl really an old growth species? Was it really in trouble? Was logging really having any effect? These were questions that no one knew the answer to - we could say that maybe the real escalation began in 1985 when a fellow named Andy Stahl who was with the Seattle Sierra Legal Defense Club was concerned about the fact that environmentalists were losing these battles to stop logging timber sales because they lacked the science and Eric Forceman had only himself after all that time only been able to collar 13 birds and so he had very little data, so Stahl decided that maybe the thing to do was for the Sierra Club Legal Defense fund to make up its own science . Stahl's father was a microbiologist with the University of Oregon and had contacts with the American Association of Advancement of Science. He went out looking for a wildlife demographer and he found a fellow named Russell Landey who was at the University of Chicago spending the summer in Bigelow Laboratory in Bruth Bay Harbour (Maine) . Stahl flew out to Maine and met with Landey and asked him if he would write a paper for the peer review for an academic journal that will show that logging is threatening the owl. Landey said that he would. Landey didn't know a robin from an owl. He was a number cruncher , but he agreed if Stahl would feed him the data, Landey would crunch the numbers. So Stahl fed him the data - Landey crunched the numbers and they came up with this paper that was eventually published in a peer review journal, But well before it appeared in the peer review journal Stahl was stapling it as an appendix to The Sierra Club's Legal Defense funds petitioner to halt particular timber sales and low and behold - it worked. You can say that the real band wagon of stopping the owl began with this paper later, and if I have time, I might go into the scientific flaws of this paper. But for the moment, we can let it rest at this point The point is that the paper at that point - very shortly thereafter - the owl was listed as a threatened species and logging began to come to a crunching halt in the Pacific Northwest and this was done on the basis - on that at most the 13 - that the actual data that only existed was Eric Forceman's 13 owls. And Eric Forceman had - by the way - looked for the owls in old growth . He assumed from the beginning that

they were in old growth species - looked in old growth and couldn't find any so concluded that the logging was threatening their existence . So what we have here in the beginning of a conflict You can say certainly in the circ of 1970 it started. By the 1990 we had the concern over the California and the issue began to spread down. By 1993 the President Clinton held a Forest Summit and a team of ecologists put together by the Clinton administration came to what they thought was a solution to the Northern Spotted owl crisis. But of course, that battle is still being fought in the courts - it is not over yet - the Northern Spotted owl issue is still going on. The amount of allowable timber sales under the agreement that the Clinton administration worked out has never been reached because environmentalists lawsuits are holding it up. So that one is still in the courts and is still being fought. Meanwhile, the battle spread - it spread to the California spotted owl in northern California and then it spread - as I mentioned - to Katron County in Mexico and Arizona with the Mexican spotted owl. And it is still going which is in close to 30 years in counting that this issue has been going.

And what do we see when we go to places like Katron County - I think we see really a cultural conflict. Obviously we are dealing with an issue that is multi-faceted; it partly a demographic issue, it is partly a scientific issue; it is partly a class issue (poor versus middle class recreationists), it is partly a issue of values (what we particularly value in nature - do we value the spiritual solace that afforded by hiking and walking in big trees ) or is it the resource against the values as perceiving trees as a resource. And what we really see increasingly is a division between - what you might think - as two cultures. And I do a great deal of traveling to discuss environmental issues. I was just in Australia discussing forest issues with forestry people with the Australian government in Canberra and I find the same thing there as I have in the USA and what I can make out - there are similar things going on here. And we really have a conflict that is a profound one between two different divisions of people and their relations with nature. In the USA, the critics of environmentalism are sometimes called the wise use people. The wise use movement is a term that they themselves - mostly rural people - gave to their movement borrowing the phrase from the Gifford Pinshou - the Teddy Roosevelt's forester and the first forester they had the USFS .

### **And we spoke about the need for wise use of natural resources .**

And if you compare these visions you see that they differ in virtually every way . One side preaches preservation and diversity (that is the environmentalists) and one of ecological catastrophe. The other stands for stewardship , but neither side is very clear exactly what these things are. What is stewardship ? What is the catastrophe that awaits us? The wise users make their living on the land - they believe in nurturing nature for human benefit They see the earth as a garden that given tender loving care will bloom indefinitely. Environmentalists are generally college educated urban professionals, many of whom have fled the city to seek solace in rural areas. They view the earth not as a garden but as a home to creatures of equal value of which humans occupy but one small place. Hence these people disagree about virtually everything. To us users nature is a pyramid where people are on top . It is imperfect



until it has been improved by human labour . It only has intrinsic value but it is infinitely veoned to biocentrists or environmentalists is a web in which humanity is inmeshed . It is imperfect and has intrinsic value but its riches are limited .

So one side idealizes private enterprise - the other governmental protection . One reveres domestic livestock - the other wildlife. One believes that forests can survive only if they are logged - the other insists that people be kept away. Although many on either side are well intentioned - both sides distrusts each other. Biocentrists or environmentalists see wide users as greedy destroyers of nature . Wise users view biocentrists as socialists living in \$250,000 wooden houses who yearn to return to caves. So - while both claim to be champions of the environment - neither in my view really is. The stewards tend to put the pocket book first - while the biocentrists give primacy to esthetics . Both frequently ignore science - and I will get into that in a little bit. Stewards oversimplify the challenge to face deactive management while biocentrists or environmentalists fail to see the inadequacy of hands-off preservation policy. So what we have here is dycodomy of profound avision - and what I want to emphasize very early on - there is nothing new about this. Human attitudes towards the forests have been conflicting for melinia for thousands and thousands of years. What forests have been alternately viewed as the places of evil spirits and being the places of innocence and purity . They have been viewed as places where you have hob globins and trolls and witches . But also, places that have been left undefiled by human averse. Forests, in fact, and those who cut trees are alternately viewed throughout history as being defilers of the innocent (nature), defilers of what was pure and as the agents of progress clearing the land for broad humanity, clearing the forests to make room for the farms. So we have all along - we being the Western civilization for certain - have had ambivalent attitudes towards forests . Now what we are seeing today is nothing more than the latest round - in what you might think of - in a long , long conflict that is embedded in the ambiguities of the symbolism and values of western cultures. So I am not going to suggest that I can come out to the answers to resolve this and we will end this conflict for all time . Nothing will end this conflict for all time - it will continue indefinitely. But, I might point out what we see now in the conflict and the form that it is taking now is a consequence of a summit of ideas that have reached primacy in the political context and in the scientific context that are driving a wedge between people and exasterbating the polarization of the issues surrounding forests.

I have in mind - I want to focus today on one particular idea . It is the idea of the self regulating ecosystem management Now first of all - ecosystem management - I am astounded to see when I travel around the world how widely this idea has caught on. When I wrote "Playing God in Yellowstone" I noted in that the USA National Parks Service in 1968 was the first governmental agency anywhere - as far as I know to introduce ecosystem management. And call it that. And in their Green Book, which was their management guidelines for natural areas parks published in 1968 identify that they are doing as ecosystem management. By the late 1980's, however, ecosystem management was found everywhere. In the Clinton administration solution or plan for the Pacific Northwest west slope forest is called a late succession ecosystem project. Then the Clinton administration moved east and established the interior Columbian

Basin ecosystem management project - the Bush administration and the Clinton administration has established ecosystem management as a guiding policy for a dozen Federal land management agencies. In the 1990's, as part of the new perspective program that the USFS adopted ecosystem management. In 1992, the Bush White House announced it would follow a " ecosystem approach " when administrating the Endangered Species Act. In 1994, the US Fish and Wildlife Service announced an ecosystem approach to " fish and wildlife conservation " that included organizing the country into 52 separate ecosystem units shortly after the Bureau of Land Management embraced ecosystem management as well. And even the Environmental Protection Agency in its national performance review of January 1994 announced that it redefined government by using the ecosystem management concept. It said "hitherto the EPA has considered its mission to be protection of human public health and now it realizes that this mission is too narrowly defined and its proper mission is the protection of ecosystem health from the man-made stressors that threaten it. Later in that paragraph it identifies the stressors as the form of threat to the stability of the ecosystem.

So, here we have government no longer serving the people but serving the ecosystem and protecting the ecosystem from people . I would say it is a pretty, pretty radical change in the concept of what government is. But, more of that in a minute. Now -- the ecosystem management that we see in place certainly in the United States is based on what might be called a metaphor of nature. Since the beginning of time humans have been appealing to nature as a source of symbols that represent their values and give objective meaning to their values. And the ecosystem management concept is based on the metaphor of nature as a giant machine or rather, a collection of machines , like a collection of watches in which each watch, each little machine (ecosystem) if it has all its parts and can operate and function in the way that it is intended to in the way that it can will maintain itself in equilibrium even when it is subjected to perturbations from the outside. So, in other words, ecosystems can maintain themselves in a state of equilibrium so long as they maintain all their parts. But if they lose sufficient number of parts then they can't operate as effectively - and if they lose enough parts, they are no longer able to maintain their equilibrium and they can suffer what is sometimes called ecological collapse. Now the classical source of this simplified model is in "Berry Commoners Closing Circles" a 1970 Sierra Club book and is laid out beautifully and articulates it very well and is very clearly stated and has an enormous appeal. Because what it suggests it has a number of immediate implications and it is worth keeping these implications in mind. It means that nature can take care of itself if we would only get out of the way. A self regulating ecosystem will work if we will only get out of the way. It means that bio-diversity - keeping all the parts - becomes the **paramount** concern here. If the machine loses parts it can't function correctly. And you will find if you go and look in the literature on many books written by environmentalists that use the term - in fact they borrowed it from Aldo Leopold originally - that the importance of keeping all the parts - that is the metaphor. So the importance of bio-diversity is a direct consequence of believing that this metaphor of nature has meaning and has objectivity. It means that the past is always better than the present or the future. Because these ecosystems can only lose parts but they can't gain

parts - they have got a machine and when it is perfect - before anyone has messed with it . The only thing that can happen to that machine is it can lose parts and then not operate as well. It can't operate better. So there is an emphasize on decline that is built in - or pessimism that is built into this model. It suggests that native creatures , ie those who are actually part of the original machine are good but exotic or domestic animals and plants are bad because they were not part of the original machine and they can't serve as functional equivalence for the parts that they may be competing with in the machine . It means that we must promote late successional plant communities - if the best way to preserve nature is to let nature take its course - what happens when you let nature takes it course - eventually plant/animal communities reach a state of late succession or climax. And in fact, since this model equates stability with ecological health then the ideal here is to have nature be as stable as possible. Now promoting stability in nature - if you look around you - where are you going to find examples of stability in nature - well the closest thing to stability in nature - you will find in climax plant and animal communities like old growth forests which are changing much less than sub-climax stages - they are changing at a slower rate.

So the concept also implies that there is an importance of re-establishing original conditions. Now if you think about it the term "original conditions" is kind of silly isn't it? What were "original conditions" in the world 4 billion years ago when the atmosphere was mostly methane or ammonia, 65 million years when dinosaurs roamed the earth, 15 thousand years ago in North America when the major mammals were woolly mammoths and saber toothed tigers - what were "original conditions"? Time concept does not make any sense and yet we find in the definition in the national parks service mission statement so-called the Leopold Report - we find in the statement of purpose of the administration late successional ecosystem project in the west slope of the Cascades the statement that the goal is to re-establish pre-settlement conditions - okay - as if pre-settlement conditions were one thing but this fits the model and doesn't make sense unless you believes this model. But if you believe the model, then it does. Original conditions that when the machine was perfect and it had all its parts . And it means - in fact -that we only need one preservation policy that fits all conditions - namely letting nature takes it course . And, of course, it gives a special role to government as the EPA noted. Because now, who is going to look after the interest of the ecosystem . Well, not these voters of the people - they are going to be self-interested. The people as individuals are going to be pursuing their own individual interest. So there has to be some governmental entity that looks after the interests of the ecosystem which takes precedence over the interest of individuals. So, collarly to this model is the notion of biocentrism as it is often called - the notion that policies that aimed for promotion of human interests are misguided because policies should aim at promoting the health of the ecosystem, which is to say the stability of the ecosystem, and that the supreme good - if you like - is the health of the ecosystem and that is what human interests and human desires must come as secondary to that. Humans are merely one cog in the machinery of nature. The machinery of nature is the ecosystem and it is the ecosystem that is of supreme importance . And so, humans have to be put in their place and it is simply humorous to suppose that they should have any special place in nature. Now, this is the mare paradon - now I might note

very briefly that we have the other paradigm. We have the paradigm that comes out of the wise use side - this is the one that was used when I was referring to Gifford Pinchou - a fellow who studied his forestry in France who was very much influenced by a tradition of western forestry that goes back at least to the time when Sir John Evelyn in 1664 published his tree dissertation on forest trees and the propagation of timber in His Majesty's Dominion - one would consider the landmark in efforts to begin to apply a rationalist's approach to forest management . And although that was an attempt we certainly and were made very well aware of over the years of the fits and starts and mistakes that this supposedly rationale approach to forest management has made over the last 300 some odd years . So you might say here that we have faith in reason that is behind this rationalist pincheon approach - the notion that forests can be managed by science. So believe in science.

I want to point out that if we go back over the last few centuries leading up to the this fight of Pacific Northwest - what were the sources we had in the beginning of the century we had two traditions in the United States at least. We had conservationism optimized by Teddy Roosevelt and Gifford Pinchou and this was the rationalist or scientific approach to the management of trees. And at the competing doctrine was the one optimized by such people as John Muir - Co-Founder of the Sierra Club - a preservationist who argued for the non-interference in forests and the non-interference in nature. It is very interesting to note that where this preservationist doctrine came from . Certainly in North America the start of it was with the Puritans in the 17th century in New England a Congregationalist whose doctrine preached that God's presence was perceivable in all things. By the early 1700's this doctrine had shifted to essentially by the late 1700's saying in effect God was identical with all things, ie. all things are sacred. This notion pantheism - identification of all of nature with God became by the end of the 18th century a strong element in one part of the congregational faith. In the other part of the congregational faith went in a rationalist direction and was eventually dropped from congregationalism became unitarism. So you had a split here - between the rationalists and those who believed in a religion of nature that went back into the 1700's - the split became obvious and apparent by 1820 when Ralph Emerson wrote his landmark essay on nature in which he explicitly came out of the closet as somebody who believed in - you might say - the spirituality of nature and the identification of all nature with God. Emerson and his friend Henry David Thoreau were friends of John Muir - John Muir founded the Sierra Club - there is an exact apostolic succession if you like between this congregationalistic tradition that goes back to the Puritans and their modern preservation movement. It is a religious movement - it was in America from the very beginning.

But now on top of this is laid another tradition. Now we are getting back up to the contemporary idea of the ecosystem and this other tradition is the scientific one. It is ecology. Now ecology is of course a term conceived by a German zoologist Ernst Haeckel in the 1860's and he meant by it nothing more to note than in fact - the science of life had to be a science about all the conditions of existence. By 1935 an Oxford botanist named Edward Tansley coined the concept of ecosystem by which he merely meant to sort of systematize the sort of thing that Haeckel had been referring to - but the

real ecology as we know it today is something that grew out of World War II. It was during World War II that a mathematician at MIT named Norbert Wiener conceived and developed a new kind of mathematics that he called cybernetics that he had developed for the purpose of designing aiming devices for anti-aircraft guns and then later for guided missiles. After the war, cybernetics was exciting lots of people and in the United States many foundations were sponsoring colloquia and conferences on how can we use cybernetics in other fields, and lo and behold, by 1947 an ecologist at Yale by the name of G. Evelyn Hutchinson embraced the notion of applying Wiener's cybernetics to Tansley's ecosystem. He put the two together. If we do that, then we can suppose that nature is a self-regulating system just like the anti-aircraft aiming devices. And immediately, for mathematical reasons alone - not evidence - what Hutchinson did was to infer that therefore bio-diversity with complexity was good, The more parts to the machine the more able it was able to withstand perturbations and the more accurately it could operate. So these conclusions were immediately drawn for mathematical reasons and immediately this set up a model of planning which in the United States the Federal government became infatuated with. The Atomic Energy Commission was interested in managing human populations in the case of thermo-nuclear war and so, it went into systems ecology in a big way and they hired two brothers who had been students of Hutchinson, Howard and Eugene Odum to go down to Edgemont and do ecosystem studies. The Department of Defense set up ecosystem ecology labs in various parts of the United States. The AEC set up one in Savannah River in Georgia, another Hanford Nuclear reservation in Washington State and another at Oak Ridge Tennessee. They were pouring money into ecosystem studies - now why were they doing it. Because the model suggested that nature is healthy when it is stable. That gave governmental planners a justification for setting goals - they could say that our policy aims at something - it aims at stability. Whereas there were many ecologists throughout this time who didn't buy into the idea - evolutionary ecologists particularly pointed out that evolution occurs to individuals, not to systems and if stability were the rule, there could not be evolution because evolution is a response to disturbance. So - they said, that it is disturbance that governs nature, not stability - stability is an ancient idea - it has been popular since the 10 thousand years B.C. and the ancient Greeks, but it is an ancient idea, but it is not the way nature works. However, although the evolutionary ecologists may have been winning the intellectual battles, and eventually they won the intellectual battles - the systems ecologists were winning the influence with government planners. Because for an evolutionary ecologist to tell a government planner look - "nature is random - things just happen No one state is best or worse than another". The government planner says, "what am I going to do with that? How am I going to develop a social plan for this? " But a social systems ecologist like Howard Odum, he said, "Look - nature is healthy when it is stable and it is stable when these things happen. And I can help you to make sure this happens."

Now we have a goal for policies - stability of nature equals health of nature. And now we have a way to do it. Incidentally, then give considerable amount of policy making power to the ecologist. Now, the ecologist has got a role in government advising us on how to get to this mystical state of stability. So the idea was politically popular. Now

if we trace it what we find is by the 1960's the AEC money was running out and the Office of Naval Research Department of Defense money was running out and the ecologists, by this time, were really hooked on the big dollars that they were getting from the federal government for this research so they began in 1966 - Howard Odum, then President of the Ecological Society of America began launching a campaign to get the federal government to subsidize ecology in a big way and sure enough , during the Nixon administration appropriated 10 million dollars for American ecologists to take part in the United Nations International Biological Program. And, as I mentioned earlier in my talk, one of the particular aspects of that program was the Coniferous Forest By Own project which took place and was started in 1970 in Oregon State University and was, you might say, the beginning of the new forestry . Here we see exactly how the history of this idea led right up to the conditions - the other aspect of this idea of course led directly to the Endangered Species Act which of 1973 - and if you go and reread the hearings and interview as I did all of the people who were writing the Act - they were profoundly influenced by Barry Commoners model in the book, which was the best seller at the time, "The Closing Circle". So we find in the Endangered Species Act of 1973 , we find the statement "The Endangered Species Act of 1973 is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" .. So the ecosystem idea started being built into our laws beginning with the Endangered Species Act and then with later laws and policies. As I mentioned earlier than that, the Parks Service was as early as 1968 that they put it into their management. policy. They didn't have to go to Congress to get it.

So, there we have a process by which this idea worked its way - you might say - into National policy. Now, lets take a look at some of the aspects of this idea and how it is actually working out. As evolutionary ecologists and many community ecologists noted there is no evidence of stability in nature -- that nature is - in fact - characterized by constant and random disturbance - the more they looked at it the more important they came to realize that disturbance was in maintaining those conditions in forests that we like to see. If there is no stability of nature we can't say identify the health of an issue with stability - that means, there is no such thing as health of nature. You can speak about a given set of environmentalists being healthy for something, but you can't just speak of it as being healthy. So you can say that an old growth forest might be healthy for flying squirrels but it is not healthy because Silver Spot Butterflies, for example, can't live in old growth forests. Different creatures require different conditions and some require early successional conditions. A policy - such as the policy in the United States of the Endangered Species Act and the Wilderness Area Act and all the other laws in the United States governing preservation promote late successional conditions, which means they are condemning to extinction early successional creatures . And in fact that is happening so we find many creatures on the endangered species list there and they are not getting better because they require a disturbance - the Bells Fario in Texas in which millions has been spent is such a creature , the Silver Spot Butterfly , the Corner Blue Butterfly in the mid Atlantic's states - and so on.

So this policy puts early succession or creatures at risk. It creates the myth and encourages the perpetuation of the myth of the past as being the Garden of Eden and things have gotten worse but not better. That is to say - we suppose - at one time the ecosystem was perfect and then it began losing parts.. And it implies that in the past humans did not have any effect on effecting landscape or the environment around them. And therefore, the people who tend to believe this myth tend to believe that native Americans did not play a profound role in the modifying the environment. Now the amount of literature by archeologists, anthropologists and others dealing with the historian and cultures of native people the amount of literature that demonstrates how native people around the world were - in most places - infectorate fire burners would fill this room. The volume of evidence is so great it is so unbelievable . But when I was writing "Playing God in Yellowstone" and I found lots of evidence in Yellowstone the Parks Service to this day put out brochures the Indians were afraid of the geysers in Yellowstone so they had a little effect in the Park and they didn't burn, and they were hardly ever hot - they were hardly ever there , of course, they were again afraid of the geysers. Hogwash. The native Americans played a profound role in Yellowstone and throughout North America . Even more so among the aborigines of Australia - yet now the forestry people in Australia are having a devil of a time selling this idea to preservationists who don't want the forestry to gauge in any prescribed burning. And the foresters say look - it was done by the aborigines from mellenia and if we want to maintain the kind of vegetation that has involved here we have to burn. But no, this notion that the ecosystem was perfect without any human intervention so mesmerizes people that they don't want to believe that native and aboriginal people were ever really that effective in modifying and changing their environment. But they were.

And finally this notion is what philosophers would call it teleological notion - it is value late, it is not really science - it is suggesting that there is a state of affairs that is good and that the scientists can tell what is a good state of affairs. It is suggesting that if you like the health of nature that is a value concept Right. So what is a scientist doing saying I have now identified what is good for nature. There is no good for nature. There are just different states. Again, was the nature healthy in 4 billion years ago - was our climate healthy when dinosaurs when extinct 65 million years ago. It wasn't healthy for dinosaurs but maybe it was healthy for our ancestors or we wouldn't be here. So, you can say it is healthy for, but you just can't say it plain healthy. So, rejecting the notion of stability of nature in effect deprives the ecosystem concept of any real usefulness or value.

Now, one other final thing about the ecosystem concept. It is what a former Oxford professor of mine, Gilbert Wried called "to suppose that ecosystem are places on the ground - that there is a greater Yellowstone ecosystem - for example - or a northern Continental Divide ecosystem is to be guilty to what he called the "fido-fido" fallacy confusing the name of 'fido' with the dog "Fido" . An ecosystem as Hutchison conceived of it was a mathematically modeling concept - it was a concept - it didn't have location - does the number one have location - does " $\pi$ " have location - no. " $\pi$ "

doesn't have location, but the number one has location, but the number one is a concept - it doesn't have location. Similarly ecosystem is like " $\pi$ ", or like the number one, it doesn't have location. You can't draw it on the ground - it is not a place with boundaries - so what do we have - you give you an example of how ridiculous this gets. In 1970's, the National Parks Service in Yellowstone was declaring Yellowstone Park to be an "intact ecosystem" for the major m-million species . It is the Parks major m-million species . A few years later a Greater Yellowstone Coalition - an environmental group was formed and they identified what they a greater Yellowstone ecosystem which they identified as 6 million acres. Two years later a congressional research service doing work for a report for the House Sub-Committee on Parks and Public Lands US congress identified the greater Yellowstone ecosystem as 16 million acres. In 1972 the Vision document a joint document of the greater Yellowstone Ecosystem put together by the forest service and the parks service identified the greater Yellowstone ecosystem as 22 million acres. A committee flew in from Berlin and flew around the park for two days and therefore became an expert on the system and declared that the greater Yellowstone ecosystem was 24 million acres . But now we have many environmental groups in the area who say no - the real ecosystem is all of Western Montana, that is to say that we have to have a connection or corridor between the greater Yellowstone ecosystem and the northern Continental Divide Ecosystem. So you see, it is infinitely a lasting concept - it is a political concept. It has political uses because it is infinitely expandable and in fact, you draw a line in the ground as we did in Yellowstone, let's say, and you say, we are going to let nature takes its course within this boundary . When bad things happen as they do - what happens? They don't say - oh, our policy failed - no, they say, that is because the ecosystem boundaries weren't drawn broadly enough. If we make it broader then things will stabilize - they are still pursuing the mythical stability. So they keep drawing the boundary larger and larger with the hopes that they will eventually get it large enough so everything will stabilize. But if they made the whole earth one ecosystem - which in a sense it is - Gia - it still not self regulating system, it is not governed by stability, it is governed by a constant change. So this is a notion that has profound effects for redefining how government views its own role viewing what people see as their own role within a relationship with government . And it is based on a mathematical mistake , as another way of putting it as the biologist Daniel Botkin "ecologists' increasing reliance on the physical sciences and engineering for theory and mathematical approaches concepts, model and metaphors led to an increasingly sophisticated growth of mathematical theory or formal models that required and led to exact equilibria and to a world view of nature as a great machine. These foundations led to an untenable situation - the predominate accepted ecological theories that served the undisturbed populations and ecological communities would achieve constancy and abundance and assertion that became inconsistent with new observation. So, by the end of the 1980's it became pretty much a consensus among ecologists that the notion of the self regulating ecosystem was a mistake . For example, in 1990 the New York Times Centre sent up a reporter to a meeting of the Ecological Society of America and he came back and he wrote this report that included among other things this sentence, "the concept of natural equilibrium long ruled ecological research and governed the management of such natural resources as forests and fisheries and led to the doctrine



popular among conservationists that nature knows best and that human intervention in it is bad by definition. Now an accumulation of evidence has gradually led many ecologists to abandon the concept or to declare it irrelevant and others to alter it drastically. They say that nature is actually in a continuing state of disturbance and fluctuation, change and turmoil more than constancy and balance as the rule. As a consequence, they say leaders in the field textbooks will have to be rewritten and strategies of conservation and resource management will have to be rethought."

About a couple of years later, Donald Wooster, an ecological historian who loved the idea of the self regulating ecosystem lamented - he was unhappy, but he was an intellectual honest person and he concluded "the climax notion is dead - the ecosystem has receded its usefulness and in their place the idea of the lowly patch. Nature should be regarded as a landscape of patches - big and little, changing continually through time and space responding to an unceasing barrage of perturbations". So now we have that is what the scientists are saying but are we seeing this rethinking. No, we are seeing an absolute bandwagon effect to the ecosystem self model and as opposed to promoting patches - promoting large continuous expanses of climax conditions. So here we are seeing a move in the policy arena that is quite out of line with the direction that science has been going.

And now we come back to this fight over forests - this ecosystem idea, this ecosystem management takes planning and puts it in the hand of the essential planners in Washington in the state capitals and the province capitals. It puts very high stakes on how the government makes decisions because they are involving the management of large areas. We have one preservation policy in the United States and as a result this one policy - what happens the stakes are very, very high. What we should - in my view - if we want to diffuse the situation we number one have to take seriously what the New York Times said and take seriously an implication of the fact that there is no health of nature - no stability of nature. And I might say that the critics of environmentalists are as bad as the environmentalists themselves in buying into this language - they refer to the historic range of variability and forest health, and so on - those are inaccurate expressions. If you recognize there is no health of nature - what do we have? What we have are a lot of competing interests. Some people like to go into forests - they like to see big trees and they like to hike and they like to spiritual solace from the solitude of going in places where there aren't other humans. That is a legitimate value. Others want to go into the forests to cut the trees - that is a legitimate value. What we have here is conflicting values and no one has the moral high ground. And a lot of these fights that we see are because each side thinks that it has the moral high ground. The wise users thinks it is rational wise use approaches is the only appropriate way - the environmentalist say no, the only appropriate one is the health of nature which is to preserve through "let alone policies" of the national forests wilderness areas in national parks. If we get away from the health of nature and we get off our soap boxes and we can get down and actually then begin to discuss in a way - I would hope - with more humility how we might work out agreements and make compromises in order how to use particular areas of land. This is made a lot easier if it can be done at the local level. And, I am running out of time, but I would

mention that we are seeing in the United States now, a few examples of these local initiatives . One is called a Quincy Library group project in Quincy California where environmentalists, loggers and local government people got together and they sat down around a table and they were able to work out a plan for the management of the Plumas National Forest right next to them in the other two national forests in their region. And in fact, they couldn't get support from the main line environmental groups because they didn't want Washington to lose control of planning in Plumas . But they did manage to persuade congress to pass a law initiating and putting into effect the plan and the Clinton administration signed it. That is to me - and there are other examples - of real success stories when you start dealing with these issues at a local level and you get away from these ideologies here that tend to contaminate a debate. So what I would like to see is not one policy but a diversity of policies - more experimentation and more humility.

Thank you very much - I am sorry that I ran long, but I would be very happy to entertain questions - if you have any.

**Question No. One - The proper role for science is :**

(1) informing the public about the implications about various policy alternatives, and  
(2) when public decision making machinery has reached a policy conclusion providing the expertise needed in order for us to know how to get to that goal that society chooses. What is wrong is to have the ecologists choose the goals. And that is what is happening increasingly now-a-days. Where we have the scientists/ecologists who are being empowered to tell people - the American people - i.e. identify what supposedly is the healthy state of nature which policy they should aim for. Yes, there is definitely a role for science but it is a different one - but it is too frequently used now.

**Question Two.:** One of the group of sciences that have been left out of policy making have been those scientists that deal with the past - paleo-botanists , history ecologists and archeologists who are the experts on these questions as so far as we have knowledge of what conditions were like in the past and past rate of change . In fact , we have relatively little knowledge but we do know for example that mass extinctions have occurred periodically through the history of the earth. And if we take - for example - the current concern of extinctions the high numbers that have been put out by Edward O'Wilson - I debated him at Harvard on this issue - it was based on a Wilson "species area curve hypothesis - If you lose so much habitat - you lose so much percentage of species . Now that species area curve when people have tried to test it have not stood up very well to verification . And in any case it is a hypothesis - these are extinctions that are supposedly occurred , but if Wilson admits we have no evidence that they occurred . He is arguing that creatures that we haven't even had a chance to identify have gone extinct. Well - that is a statement that is not verifiable . What we know with the specter verification is the International Union for the Conservation of Nature and the World Wildlife Fund which are very reputable and environmental organizations underwrote an extensive study inventory data to actually categorize rates of extinction and what they found were world wide rates of extinction

of one or two species a year . Now that is very different from the thousands that Wilson said - now I am not saying that it is accurate - I am just saying - we don't know yet who is right on this - and I don't know yet at this point and so I admit we want to act on caution - I am not advocating that we not make efforts to safe species I think we should - I think we should also keep in mind that we really don't know who is right with respect to the issue.

**Question Three:** The European - Jerodiam pointed out that in an article that he wrote for Smithsonian exactly how many birds are going extinct in Europe during the last 300 years -I think he lists six. Of course, in Europe and North America this has been very carefully documented - we know that in North America no major mammals gone extinct think in 10 thousand years - now it is true, in Europe as you say - some species have gone extinct but lets note a couple of points. Number one is: the ecosystem didn't collapse when Irish alp disappeared. Nor for that matter when 300 mega fauna disappeared was North America at the end of the World. Now I am not trying to justify extinction - I am just trying to put this in a certain perspective - now should we be concerned - absolutely. Should we make efforts to address this - yes, but we should also be clear about what is really happening and what is not. Things that I see mentioned again and again by a number of environmental groups is that the forests are being depleted around the world - they are not being depleted. My colleague at the Kennedy School at Harvard - Jessica Mathews - who is vice president resources and colleagues put together an exhaustive look at this question and they concluded that forests and the temperate zones of the world have been increasing in extent including in China since 1950 - so the forests - no question rain forests are being depleted - but in the temperate zones of the earth they are not . We should be especially concerned what is happening in the rain forests but why should we be concerned - we should be concerned because genetic material might have a great deal of value to us because we may have a great deal of interest having these creatures around - frankly I think it would be great a lot of the mega fauna were still around. I am sorry - I miss them. But it also doesn't mean the end of the world.

**Question Four:** There is a role in science in trying to determine what does society see acceptable to help us clarify what are the alternatives and what are the possible implications of various policy alternatives . Yes, there is an advisory role - if you like - to tell us if we do (a) - what will happen, do (b) - what will happen. Definitely - that is . **What is the alternative step?** Deciding value questions is a role for the society and their government and people and their represented government . The role for science is to stay out of recommending value - that is not a role for science. Scientists have no more expertise . If you take poll taking as a science - then I would have to agree with you, but one thing that we need to be very careful about For example, in Yellowstone - now-a-days when you press Park Service and what is happening in Yellowstone they say - well Yellowstone is a laboratory - scientists need it - letting nature takes its

course in Yellowstone is a great experiment . So scientists can satisfy their curiosity what happens when you let nature takes its course . There are - what you might call the values - the personal subjective values of scientists - the personal subjective values of scientists are not innocent - everybody has self interests, everybody has their own biases - so do scientists, and scientists have no more role in being wise man on the questions of value - and so does nobody else in society - Wilson and the other ecologist certainly can express their own opinion about what they would like and they do - that is perfectly appropriate if they don't do it in their academic literature and they don't do it in their role as policy advisor - and unfortunately they do - do that.

**Question Five:** Conservation International and IUCN Conferences on this issues and what is interesting is the environmental groups are right on target in the third world . They recognize you cannot save the rain forest unless you get the support of and cooperation of the local people who live on the ground out there - and so - their efforts are based at getting to the locals . The exception is the IUCN which after all, Prince Philip is the President of - it is an establishment type organization and I see IUCN many people feel is weak - precisely, because you see it tends to work through governments . And when it is dealing with the Brazilian rain forest it works through the Brazilian government. Conservation international does not and I think the approach of conservation international of these other international groups is wise because of that, but the interesting thing when American groups deal with international issues estole localism and the importance of gaining the support of the local inhabitants when they turn to the United States they do exactly the opposite. They don't say well if we really want to save the forests in Oregon we have got to get the enthusiastic support and cooperation of the people that live in Oregon - no, they say we are going to pass the law in Washington and make those people out in Oregon do what we think they should do . So there is a real paradox here and we should learn from our own rhetoric of what we are suggesting with respect to the third world and apply it to our own citizens.

**Question Six:** Forests in the Pacific NW essentially haven't changed for 400 years - Well the disturbances are much more frequent out there . One of the interesting things the Clinton late successional ecosystem project states as its goal the re-establishment of pre-settlement conditions which it defines as 65% old growth and it suitably defined old growth. Now two things interesting about that: (1) is not one paper in the scientific literature that concludes that there was ever 65% old growth covered in Oregon/Washington during the last 1,000 years . You go back 2,000 years and there wasn't any Douglas fir, so we are talking about the Douglas fir forest . There are umpteen studies done of the rates of change and the amount of old growth cover by various scholars whom were left out of the policy loop in making/putting together the late successional ecosystem project and their estimates are ranged from 10% cover to 45% cover and with significant amounts of disturbance. On a scale that is a human life

time scale - so we have a tendency to look back at the past and make these assumptions about unchangingness that aren't accurate - the data doesn't support . One of the problems here to is the role of natives - now, in more recent years there has been an upward estimation of the number of population of humans in North America prior to Columbus and now there are some scholars who believe that the number of natives was equal to the population of Europe at the time. But what happened when the Spanish explorers and conquistadors landed in Mexico and the mainland in the early 1500's the diseases they introduced moved inland a lot faster than they did and they decimated - and they eliminated many, many tribes of people. They have lots of evidence of this happening in North America - in New England we have for example - we have documents for the Puritans kept good records of this of tribes which in three small pox plagues - for example - all of the tribe living in Nantucket Island were eliminated. They were 30 years apart Each one took the remaining 90% of the population - so after the third one - there was essentially no one left. They were lost - they were gone. so what was happening - so what ecologists are finding throughout North America is a profoundly altered landscape at one time through road building - through making cities - through irrigations projects - through agriculture and that with a dissemination of the population in the 1500's much of this land then went fallow - went back - and when settlers came west in the United States in the early 1800's they were coming into a land that had been denuded of its people for several hundreds of years and they thought that was the so-called natural condition . In fact evidence now suggests that it wasn't the natural condition - it was rather a consequence of the impact of a European invasion by North America by various micro-organisms introduced by Europeans.

**Question Seven: Debate** - particularly in the late 1960 - 1970's - Branches of ecology that were extremely skeptical - of the stability concept I am not trying to brand all ecologists - often I get people denying - or they say they gave up the notion of stability long ago and later in the conversation - it creeps back - or synonym creeps back - or example - I debated in Washington - David Wilco was the Chief Biologist with the Environmental Defense Fund - he first said I gave up about the notion of stability long ago - and then later in his rebuttal to one of my comments - he said, nonetheless, there is a constant stability of nature - have you ever noticed there always seem to be the same amount of robins every spring and I couldn't believe that a professional ecologist would use such an anecdotal thing to try to make a point . I talked with Daniel Bokin and it strike me that a lot of ecologists have given up the idea - have refused stability and have not thought through all of the implications of having given it up and that is what is where I fall to a larger group of ecologists - I want to say all of them - Certainly there are many who say - for example - Mr. Talbot - who is one of the authors in the Endangered Species Act I asked him - since he was an author - how did the notion of stability of ecosystem influence your thinking when you were writing the act? And he first said - I knew the ecosystems weren't stable long ago when I was a graduate student in University of California in 1950 - I wrote a paper on the importance of disturbance - I am aware of that. So I said - then what is the talk here

about to preserving the ecosystem - what is it you are preserving . And he said - well if it is not stability. Well if it is not stability, what is it? Well he said, it is the resiliency ? And I said, what is resiliency mean if it doesn't mean a capacity to return to a previous state - which is what it means in the dictionary. Which would indicate presupposing stability? And he said, well I mean integrity. And I said, what is integrity mean if it doesn't mean if it doesn't mean not being interfered with? So you are pre-supposing again another value - each one of these is a value laden concept, and he was unaware of it until finally he said - well actually we sometimes we professional ecologists in order to get congressmen to go along with us have to oversimplify things and put them in using this language. So I think we finally saw it coming out. So I don't want to say again - brand all ecologists by what Mr. Talbot thought or did but I am saying that what I will generalize about is that the professional ecologists on the whole has not taken to heart the implications of what it means in term of policy and in terms of the role of policy making and the question of forming public values over rejecting the notion of the stability and therefore the health of nature.

**Dr. Chase: Well thank you very much.**

**Dr. Beck: I would like to thank - on behalf of the Renewable Resources Department at the University of Alberta - Dr. Chase for his challenging talk and I believe there isn't a person in the room that he didn't challenge some of your values if not all of them in there and I am not going to try to summarize it more than other to just ask me to thank him again for a very challenging and thoughtful talk.**

## **FOREST INDUSTRY LECTURE SERIES**

- 1. Industrial Forestry in a Changing Canada.** C. Ross. Silversides. 17 November 1977.
- 2. The Role of Integrated Companies in Western Canada.** W. Gerald Burch. 15 March 1978.
- 3. Premises of Energy Forestry in Sweden.** Gustaf Siren. 7 March 1979.
- Agro-Forestry - Prospects and Problems.** K.F.S. King. 27 September 1979.
- 5. The Role of the Federal Government in Forestry.** F.L.C. Reed. 5 March 1980.
- 6. Breeding for Variable Environments.** Gene Namkoong. 14 August 1980.

- 7. Federal Forestry Commitments in the 1980's.** Roger Simmons. 5 December 1980.
- 8. Space, Time and Perspectives in Forestry.** Kenneth A. Armson. 26 November 1981.
- 9. Labour's Role in Forest Resource Management.** John J.(Jack) Munro. 25 March 1982.
- 10. Stocking Control and Its Effect on Yields.** Peder Braathe. 4 November 1982.
- 11. Timber Management Scheduling on Public Lands - Why the Future is Not Like the Past.** K.N. Johnson. 29 March 1983.
- 12. The Canadian Schools of Forestry - Retrospect and Prospect.** V.J. Nordin. 19 January 1984.
- 13. Increasing the Land Base and Yield Through Drainage.** J. Paivanen. 15 March 1984.
- 14. Forestry Productivity Limits: Real, Imagined and Potential.** Conor Boyd. 24 January 1985.
- 15. Air Pollution and Forest Resources - The Nature of the Threat.** Peter Rennie. 28 March 1985.
- 16. Land-Use Planning for Forest Harvesting and Environmental Concerns.**  
John A. Marlow. 28 November 1985.
- 17. Northern Forest Management for Wildlife.** Gordon W. Guillon. 16 October 1986.
- 18. From NSR to Intensive Forest Management.** Hugo Von Sydow. 12 March 1987.
- 19. Managing People - Managing Trees: Understanding Today's Environment for Natural Resource Management.** Mary Jo Lavin. 19 November 1987.
- 20. The Social Renewability of Forestry.** Harold R. Walt. 30 March 1988.
- 21. Forest Policies: Public Duty and Private Action.** Adam H. Zimmerman. 1 November 1988.
- 22. New Dimensions in the Development of Forest Policy: A View From the Trenches.**

T.M. (Mike) Apsey. 16 March 1989.

**23. Vision and Reality - The View From Sweden.** Bjorn Hagglund. 17 October 1989.

Talk presented at the Annual Meeting, Canadian Institute of Forestry at Kananaskis.

Printed in the Forestry Chronicle 66 (1): 29 - 31.

**24. The Contribution of Old Growth to the New Forestry.** Jerry F. Franklin. 4 April 1990.

**25. Developing Silvicultural Alternatives for the Boreal Forests: An Alaskan Perspective**

**on Regeneration of White Spruce.** John Zasada. 7 November 1990.

**26. Forestry After the End of Nature.** Clark S. Binkley. 20 March 1991.

**27. Sustainable Forestry: Can We Use and Sustain Our Forests?**

J.P. Kimmins. 21 November 1991.

**28. Environmental Regulations and the Implications for Canadian Export.**

Don G. Roberts. 18 March 1992.

**29. Forest Health Issues: An Entomologist's Perspective.** David L. Wood. 18 November 1992.

**30. Unconventional Wisdom: Reflections on Polarization, Politics, Prosperity and the**

**Future of the Canadian Forest Industry.** David L. McInnes. 9 March 1993.

**31. The Canadian Forest Products Industry: Competitive Challenges in the 1990's.**

Patricia M. Mohr. 10 November 1993.

**32. The Deforestation of Siberia: Economic and Environmental Problems in Russian**

**Forest Management.** Lisa A. Tracy. 25 April 1994.

**33. Alumni Presentations: Challenges to the Forest Profession: Past, Present and the**



**Future''.**

**Part I. Forestry and the Failure of Technocracy.** Lois Dellert - Class of 1979.

**Part II: Biological Truth and the Court of Public Opinion.** Glen Dunsworth - Class of 1975.

**Part III: Why My Next Forestry Work Associates Will be Less Likely to be Foresters.**

Barry Northey - Class of 1979.

**Part IV. Educating Forest Resources Managers: Challenges and Opportunities.**

Val Lemay - Class of 1981.

**34. Global Fibre Resources Situation: The Challenges for the 1990's.**

James A. McNutt. 28 February 1995.

**35. Life Cycle Assessment Studies in the Timber Industry: Pros and Cons.**

Arno Fruhwald. 2 November 1995.

**36. Accommodating Wildlife in Forest Management Plans and Practices, Is It Possible.**

Max Peterson. 7 March 1996.

**37. Beyond 2000: The Challenges of the Pulp and Paper Industry.**

Lise Lachapelle, 10 October 1996.

**38. Managing Change Strategies for Future Challenges in the Forest Industry.**

George R. Richards. 20 March 1997.

Send feedback or comments on this page to the [Webmaster](#)

Date this page last edited:

[Back to Top](#)